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ASSIGNMENT BOOKLET

9110 Mathematics 9
Module 1

FOR STUDENT USE ONLY	
Date Module Submitted: _____	(If label is missing or incorrect) File Number: _____
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FOR TEACHER USE ONLY

Assigned Teacher: _____

Module Grading: _____

Graded by: _____

Date Module Received:

_____

Module Assignment Recorded: _____

Student's Questions and Comments

Apply Module Label Here

Name
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Please verify that preprinted label is for correct course and module.

Teacher's Comments

_____
Teacher

These instructions are for students registered with the Alberta Distance Learning Centre.

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When you are registered for distance learning courses, you are expected to submit Assignment Booklets for correction regularly. Try to submit each Assignment Booklet as soon as you have completed it. Do not submit more than one Assignment Booklet in one subject at the same time. Before submitting your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

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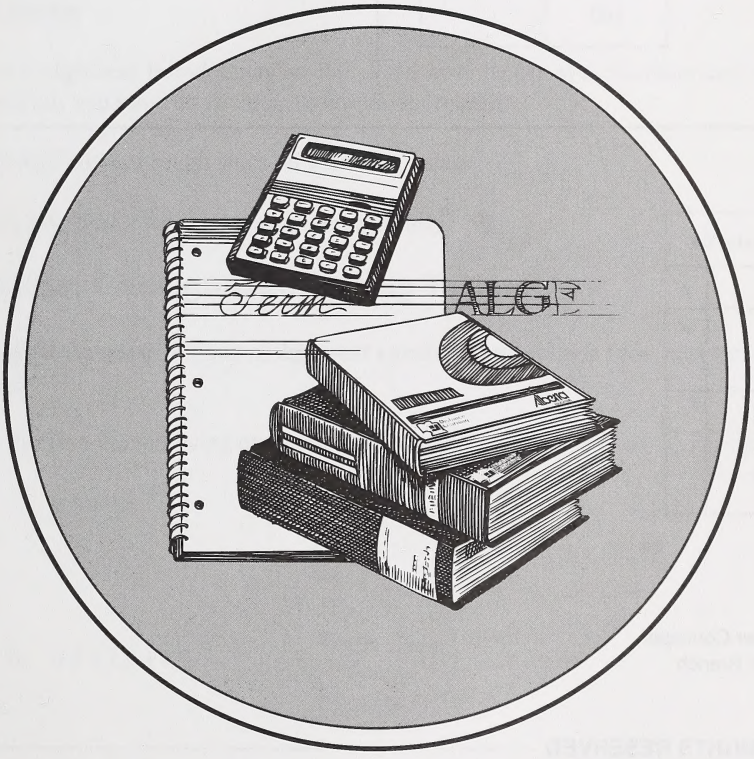
MATHEMATICS 9
MODULE 1



Operations and Number Concepts

ASSIGNMENT BOOKLET

Distance Learning

Alberta EDUCATION

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 1 Assignment	40	
Section 2 Assignment	20	
Final Module Assignment	40	
	100	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Parents	
General Public	
Other	

Mathematics 9
Assignment Booklet
Module 1
Operations and Number Concepts
Learning Technologies Branch
ISBN 0-7741-1096-1

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ASSIGNMENT BOOKLET
MATHEMATICS 9 – MODULE 1: OPERATIONS AND NUMBER CONCEPTS

Your mark on this module will be determined by how well you do your assignments in this booklet.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate section.

There are two section assignments and one final module assignment in this Assignment Booklet. The total value of these assignments is 100 marks. The value of each assignment is stated in the left margin.

This Assignment Booklet may be completed with the use of a calculator and resource materials. However, you must do the assignment **independently**.

You may do your rough work on your own paper.

Be sure to proofread each assignment carefully.

Section 1 Assignment: Using Technology

(40)

Read all the parts of your assignment carefully and record your answers in the appropriate place.

1. Perform the following operations using a calculator. Write out the keystrokes you used.

(1) a. $2.5+1.4$

(1) b. $6.2\div1.8+1.9$

(1) c. $6.2\div(1.8+1.9)$

(1) 2. What do the brackets in question 1.c. indicate?

_____

_____

3. On a particular day, the shares of Shell Canada closed at $40.65 on a volume of 28 515 shares traded. A week later, the closing price was $42 on a volume of 27 660.

(1) **a.** What was the net change in price per share over that one week?

(1) **b.** What was the difference in the cost of 800 shares over the one-week period?

(2) **c.** What would 1000 shares have cost, based on the closing price of $40.65, if the broker's fees were $100 plus 1% of any amount over $10 000?

4. Brittany spent $\frac{3}{8}$ of her \$6.00 weekly allowance at a fast-food restaurant. Taylor spent $\frac{2}{5}$ of her \$5.00 weekly allowance at the same place. Show all your work when answering the following questions.

(2) **a.** Which girl spent more money? How much more did she spend?

(1) **b.** If Taylor spent $\frac{1}{2}$ of what she had left on a birthday card, what did the card cost?

(2) **5. a.** Explain why 92 and 98 are the only two logical choices for the principal square root of the perfect square 8464.

(1) **b.** Which is the correct answer? Explain your choice.

(2) **6.** Explain why $-\sqrt{169} \neq 13$; then give the correct value for $-\sqrt{169}$.

(2) **7.** A square plot of land contains 0.75 ha. Find the length of each side of the plot to the nearest tenth of a metre. Show all your work. (**Hint:** $1 \text{ ha} = 10\,000 \text{ m}^2$)

(4) **8.** Estimate the answer to the following. Show the steps you used to arrive at your estimate.

a. $23.9 \div 5.1 \times 3.7$

b. $\dfrac{2.6(8.1-12.9)}{-1.8}$

(2) **9.** Estimate the total cost before taxes of two CDs @ $12.99 each and three tapes @ $8.99 each.

10. The following calculation was done with a scientific calculator.

$$(34.1-23.5)\times(12.7+8.4)$$

(2) **a.** Write out the keystroke sequence required to perform the calculation using memory keys.

(2) **b.** Design a method that would perform the same calculation with fewer keystrokes. Write out the keystrokes.

11. Write out the required keystrokes for the following; then evaluate. Round your answer to two decimal places.

(2) **a.** $4.9\times3.1-\sqrt{14}$ (in order from left to right)

(2) **b.** $\dfrac{45.1}{8.4\div(34.1-29.2)}$ (using the Min and MR keys)

Use the following information to answer questions 12 and 13.

Andrea used a calculator to calculate the answer to the following expression.

$$\frac{16.3+10.5}{18.1(12.4-9.2)}$$

The keystroke sequence she used is as follows:

The answer she obtained was 0.46, rounded to two decimal places.

(2) **12. a.** Devise a method to perform this calculation using the memory keys and equals keys.

(1) **b.** Is this method more or less efficient than Andrea's method? Explain.

_____

_____

(2) **13. a.** Devise a method to perform this calculation using the reciprocal key. Use whatever other keys you require to obtain the correct answer.

(1) **b.** Is this method more or less efficient than either of the other two methods? Explain.

_____

_____

(2)

14. Maryanne buys the following school supplies.

- 3 notebooks @ $2.19 each
- 4 pens @ $1.29 each
- 2 pencils @ $0.59 each

How much change will she receive from a twenty? Use a calculator and show the keystrokes used.

(20)

Section 2: Numbers and the Number System

Read all the parts of your assignment carefully and record your answers in the appropriate place.

(3)

1. List the following numbers under the proper headings in the table. **Note:** The numbers may be listed under more than one heading.

- -3.85
- $\frac{15}{5}$
- $2\frac{1}{2}$
- $0.123\,123$
- π
- $-\sqrt{12}$
- 4.2
- $-0.000\,17$
- $8.\overline{16}$
- $\sqrt{100}$
- $-\sqrt{1}$
- $4.121\,121\,112\ldots$

Integer	Rational	Other

2. Decide whether each of the following statements is true or false. Place a **T** or an **F** in the space provided.

(1) _____ **a.** The set of whole numbers is a subset of the integers.

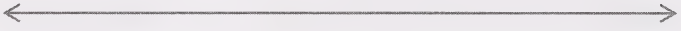
(1) _____ **b.** The set of rational numbers is formed by uniting the set of positive fractional numbers with the integers.

(1) _____ **c.** The number $0.160\,160\,016\ldots$ is a rational number.

(1) _____ **d.** π is not a rational number.

(1) _____ **e.** Every rational number can be expressed as a repeating decimal.

(2) **3.** Plot the numbers $1\frac{5}{6}$, 0.045, $\sqrt{2}$, and $-0.8\overline{3}$ on a number line.



4. Use the following terms to complete the statements.

integers	natural numbers	rational numbers	whole numbers

(1) **a.** _____ are a part of the whole numbers.

(1) **b.** _____ are made up of the _____ and their opposites.

(1) **c.** _____ include all the other groups of numbers listed.

(2) **5.** Explain why -8 is a rational number but not a whole number.

_____

_____

_____

(3) **6.** Jamel is a trout farmer with a large pond. She has a dugout made for small fish that she wants to fill from the pond. Jamel has a water pump that can fill the dugout in 10 days. Her friend Jacque has two pumps, one of which can fill the dugout in 18 days and another which can fill the dugout in 22 days. How many days will it take to fill the dugout if all three pumps are used? Round your answer to the nearest day.

(2) **7.** Use a calculator to perform the following calculations. Round your answers to two decimal places.

a. $4.91 - 3\frac{2}{3} + 1.7$

b. $2\frac{1}{3} - 1\frac{3}{4} + 2.78$

(40)

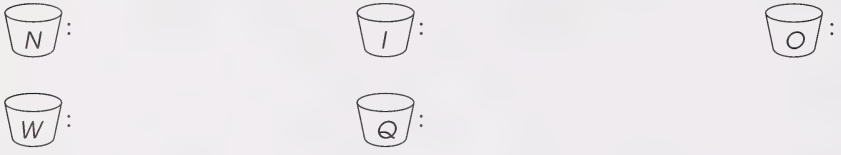
Final Module Assignment

Read all the parts of your assignment carefully and record your answers in the appropriate place.

1. Suppose you have five stacking cups—labelled *N*, *W*, *I*, *Q*, and *O* (other)—and twelve chips with the following numbers on them.

$$-\sqrt{81},\ 0,\ 4,\ -2.5,\ \sqrt{49},\ 17\frac{1}{4},\ 5,\ -97,\ \sqrt{3},\ 1001,\ -2,\ \text{and}\ 7.131131113\ldots$$

(2) **a.** Place each chip in its appropriate cup. (Show this by writing the numbers beside the cups given.)



(2) **b.** Stack the cups in order to show the correct relationships for these groups of numbers.

(2) **2.** Plot the following rational numbers on the number line that follows. Choose a suitable scale, and plot the numbers as accurately as possible. Label carefully.

$$-1.2,\ -\frac{1}{2},\ -0.75,\ -\frac{2}{3},\ -\frac{7}{8},\ -\frac{1}{10},\ \frac{1}{3},\ 0.41$$

3. Write the keystroke sequence you would use to perform the following calculations using a calculator. Give the final answer rounded to two decimal places.

(3) **a.** $\left(41.39 - 7\frac{3}{4}\right) \times 8.62$

(3) **b.** $\dfrac{18.6}{5.1(12.9 - 16.4)}$

(3) **4.** Raja, Julie, and Carlos work at a grocery warehouse. Raja can load a grocery distribution truck in 2 h. Julie can load the same truck in 4 h, while Carlos takes 3 h. How long would it take all three to load one truck? Show all your steps, and round your answer to two decimal places.

5. The exchange rate on a particular day showed the British pound (£) equivalent to $2.2228 Canadian. Show the steps for solving the following questions.

(1) **a.** What would $1 Canadian be equivalent to in British pounds? Round your answer to four decimal places.

(1) **b.** A shirt costs £12.85 in England. How much does it cost in Canadian funds? Round your answer to the nearest cent.

(1) **6.** The square roots of 121 are 11 and -11. Explain why.

_____

_____

(4) **7.** Estimate the answers to the following questions to one decimal place. Show the steps you used to get your answer.

a. $-\sqrt{53}$ **b.** $\sqrt{130}$

Use the following information to answer question 8.

The actual outside temperature seems to be much colder when combined with a strong winter wind. This apparently colder temperature is referred to as the wind chill equivalent temperature. The formula for calculating the wind chill equivalent temperature (w) is as follows:

$$w = 33 - \left[\left(0.23\sqrt{s} + 0.45 - 0.01s\right)(33 - t)\right]$$

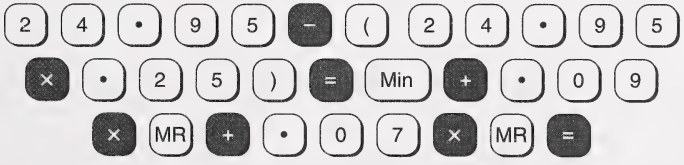
The variable s represents the wind speed (in km/h), and the variable t represents the still air temperature (in °C).

8. If the wind speed (s) is 16 km/h and the temperature (t) is $-20°C$, then do the following:

(2) **a.** Write the keystroke sequence needed to determine the wind chill equivalent temperature using a calculator.

(1) **b.** Use the keystroke sequence in question 8.a. to find the wind chill equivalent temperature (in °C). Round your answer to the nearest degree.

(2) **9.** Miranda is buying a video that is regularly priced at $24.95, on sale for 25% off. She used the following keystrokes to calculate the cost of the video plus 9% PST and 7% GST.



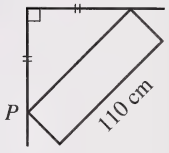
Why are no brackets required when calculating and adding on the PST and GST?

_____

_____

_____

(2) **10.** Mrs. Sanchez wanted to place a small rectangular table in the corner of a room (as shown in the diagram). How far is point P from the corner? Round your answer to one decimal place.



(2) **11.** Tyler calculated the $\sqrt{4225}$ to be 66. This is not possible. Explain why not. Do not use a calculator.

(2) **12.** A square has an area of 225 cm^2. Explain, in words, how you would calculate the radius of the largest circle that will fit inside the square.

13. Mr. McIntyre paid \$80 for a saw and then sold it to his neighbour, Mr. Erhardt, a year later for 15% less. Mr. Erhardt then sold the saw in his garage sale the following year for 20% less than he paid Mr. McIntyre.

(2) **a.** Write an efficient calculator sequence and find the amount Mr. Erhardt received for the saw.

(1) **b.** What percent of the original cost of the saw is Mr. Erhardt's selling price?

14. The calculator sequence for question 8 could have been as follows:

(2) **a.** What advantage might there be to using the memory key at this point?

(2) **b.** Where else in the keystroke sequence could the memory key be used?

ASSIGNMENT BOOKLET DECLARATIONS

The Student's Declaration is to be filled in by a student registered at the Alberta Distance Learning Centre. If the student is under 16, the Learning Facilitator's Declaration is to be filled in by the learning facilitator. Failure to complete this page may invalidate the assignment results.

STUDENT'S DECLARATION

- I have followed the instructions outlined in the Student Module Booklet.
- I have completed the activities to prepare myself for the assignments in this Assignment Booklet.
- I completed the assignments in this Assignment Booklet by myself.

_____

Student's Signature

LEARNING FACILITATOR'S DECLARATION

I hereby certify that I have supervised the learning activities completed by _____.

Student's Name

I also certify that to the best of my knowledge the assignments in this Assignment Booklet were completed independently by this student.

_____

Supervisor's Signature

If you, the student or learning facilitator, have any comments or observations regarding this module, write them in the following space.

_____

_____

_____

_____

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_____

Mathematics 9
Assignment Booklet
Module 1

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